INSECTARY
NS Dept. of Natural Resources

Insectary Notes

May/June 2008

From the Editor

Jacqui Gordon

Another busy summer is upon us. Traps are out for spruce budworm, gypsy moth, brown spruce longhorn beetle, and jack pine budworm. Christmas tree growers should be on the look out for whitemarked tussock moth larvae. Complaints of moose flies, horse flies, mosquitos, and ants are coming in fast and furious.

We're in the middle of the cycle of four tent-making/web spinning caterpillars. (Check the Insect Focus for more.)

Dog ticks are still making their presence known, even with the unusually warm and dry weather. (Have a look at the article on tick removal.)

Hope you enjoy the rest of the summer.
Til next time,

Jacqui
Jacqui Gordon
Editor . . . *Editing Is A Rewording Activity*

Contents

(click on article title for navigation)

Insect Focus
Tents, Tents, and More Tents Page 2
From the email bag . . . Page 3
Prov. Entomologist's Overview Page 4
Bits and Pieces
Pale Winged Grey Page 5
Removing ticks: not the old-fashioned way! Page 5
Project Update
BioBlitz June 2008 Page 6

Say What and Quotes . . .

In Entomology, a coincidence is something you always take seriously. -E. Georgeson

A synonym is a word you use if you can't spell the other one. -Unk

There can't be another crisis this week, my schedule is completely full. -Unk.

When I was born, I was so surprised I didn't talk for a year and a half. -Gracie Allen

Bumper-snickers . . .

Money talks, but all mine EVER says is GOODBYE!

According to my calculations, the problem doesn't exist.

My mind works like lightning, one brilliant flash and it's gone.

Due to budget cuts, light at end of tunnel will be out.

Insectary Notes

Published by: Integrated Pest Management, Nova Scotia Department of Natural Resources

***Insectary Notes* is published 6 times per year for employees of the Dept. of Natural Resources, those interested in forestry and forest insects, and entomologists.**

Editor: Jacqui Gordon (902.758.7014) gordonjm@gov.ns.ca

Insect Focus

Back to page 1

Tents, Tents, and More Tents!

Jacqui Gordon

So what insects are out there making tents and what will soon appear? I'll look at each one in their order of appearance.

Eastern Tent Caterpillar

Fig. 1. Eastern tent caterpillar.

The eastern tent caterpillar is the first one we see in the spring. The eggs usually hatch about the time the host trees' leaves begin to unfold. The web tents are made where the branch forks, usually at the stem or sometimes farther out on larger branches.

What they feed on . . .

The caterpillars feed on the foliage of a variety of hardwood species, including but not limited to: maple, oak, birch, apple, poplar, ash, and crabapple.

The eastern tent caterpillars are through feeding now and the adult moths have or will soon start to mate and lay eggs.

You may have heard of the Forest Tent Caterpillar. Although it is a defoliator and can cause damage, it does not make a tent, so that's why it's not included with the others.

Euonymus Caterpillar

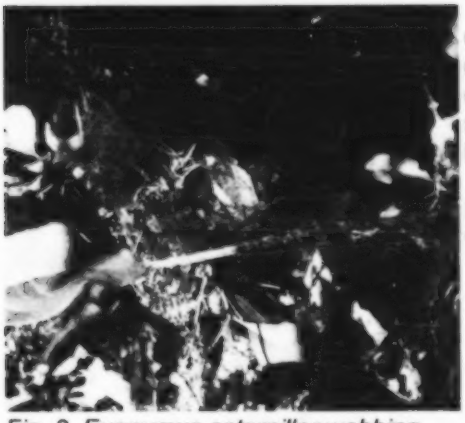

Fig. 2. Euonymus caterpillar webbing.

This is a web making caterpillar that is usually only of concern to ornamental euonymus shrubs, including the burning bush.

The larvae feed on the leaves and cover the foliage in a silken web.

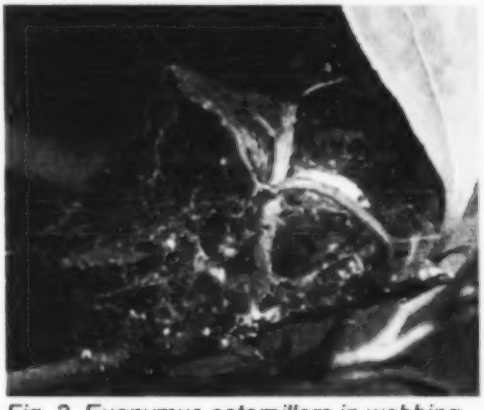

Fig. 3. Euonymus caterpillars in webbing.

What to expect from the other tent or web spinning caterpillars . . .

The next to appear on roadside cherry trees is the uglynest caterpillar. Aptly named, it spins webbing around its feeding site and can envelope much larger areas than the eastern tent or euonymus caterpillars. As the caterpillars feed the nest fills with droppings. The most common hosts are cherry, rose, and other ornamental tree and shrubs.

The last of our yearly tent makers is the fall webworm. It feeds on the foliage of maple, elm, ash, birch, and cherry to name a few. The tents are usually formed on the outer ends of the branches.

Control for Tent and Web Making Caterpillars

Prune out and destroy the nests when the caterpillars are in them: usually in the early morning or early evening. The caterpillars venture out at different times during the day so the best time to "catch them home" is in the early morning or early evening.

References

Eastern Tent Caterpillar. 2001. NS Environment and Labour.
https://gov.ns.ca/nse/pests/docs/caterpillar.pdf

Euonymus Caterpillar. Government of PEI.
http://www.gov.pe.ca/af/agweb/index.php3?number=74328

Uglynest Caterpillar. Government of PEI.
http://www.gov.pe.ca/af/agweb/index.php3?number=74366&lang=E

Fall Webworm. Government of PEI.
http://www.gov.pe.ca/af/agweb/index.php3?number=74333&lang=E

Fall Webworm. Natural Resources Canada.
http://imfc.cfl.scf.rncan.gc.ca/insecte-insect-eng.asp?geID=8125&ind=F

From the e-mail bag . . .

Back to page 1

These are a couple of the identifications requests that have come in . . . Aren't digital cameras great?

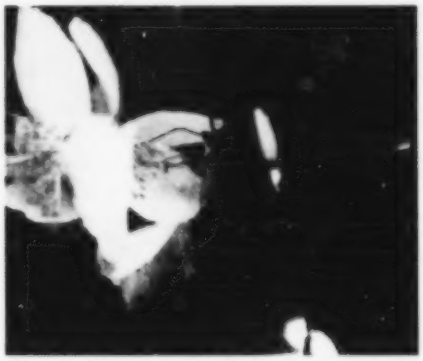

Fig. 4. Hummingbird clearwing moth

There is family of moths called the Sphinx or Hawk Moths. These moths are very strong, quick flyers and can fly forward, backward, side-to-side, and hover.

This is a **hummingbird clearwing**. They are often confused with hummingbirds because they fly like hummingbirds and some have the red and green colouration like a ruby throated hummingbird. They can be found hovering, and zipping back and forth around flowers.

This picture was sent to us early in July. Since these little guys fly quite fast they're not always easy to photograph.

The **polyphemus moth** overwinters as a pupa. The adult moth (left) emerges in May and lays eggs. The larvae (right) feed on the leaves of maple trees and other hardwoods. A mature larva is about 75 mm long. This larva and photo were sent to us last season. We reared the larva and kept the pupa through the winter. The moth emerged in the early spring

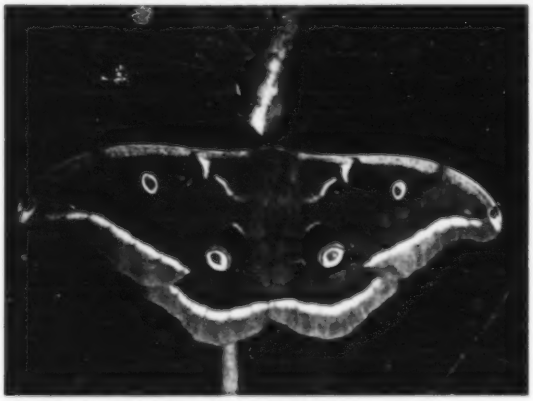

Fig 5. Adult polyphemus moth.

Fig. 6. Polyphemus larva.

Provincial Entomologist's Overview . . . . What's the Buzz?

Back to page 1

It's been said that the early bird gets the worm. But if you consider the damage we've seen across the province, especially in the Western end, it would appear that the early worms, i.e., oak leafroller and leaftier larvae, also get the worm; or in this case their choice of the most succulent and nutritious oak leaves. The oak leafroller, *Archips semiferana*, and the oak leaftier, *Croesia semipurpurana*, are two members of a group of leafrollers, tiers and shredders that can be found feeding on oak foliage in the early summer.

Mature oak leafroller larvae are approximately 30 mm long with pale green bodies and black head capsules while full grown oak leaftier larvae are approximately 12 mm long with greenish bodies and brown head capsules. Adult oak leafroller moths are larger than oak leaftier moths with wingspans of 23 and 13 mm respectively, but both species, when at rest, hold their wings in a characteristic bell shape. Both species have distinct markings. The oak leaftier is yellow with a large violet to brown patch in the middle of its frontwing. The oak leafroller is tan to yellowish in colour with a slanted dark band across its frontwing.

In late spring, female moths lay their eggs on the small branches and twigs of host trees. The eggs overwinter, hatching the following spring, coinciding with bud burst. Newly emerged larvae feed for approximately a month before pupating either inside the rolled leaf, oak leaf roller, or in the leaf litter below the host, oak leaftier. Adult moths emerge within two weeks and begin laying eggs. Both species have one generation per year.

Oak trees may be severely defoliated if either or both species are present in abundance. Oak leaftier larvae bind multiple leaves together with strands of silk and feed on the enclosed leaf tissue. This feeding causes leaves to become ragged and unsightly. Oak leafroller larvae, as their name suggests, roll leaves into tubes held together by silken threads. They feed and rest inside these leaf shelters. Their feeding causes leaves to look shredded and tattered. When disturbed these larvae drop out of the rolled leaf and hang by a silk thread.

Two or more years of moderate to severe defoliation may result in twig and branch dieback, slowed growth and overall tree decline. These stressed trees are also more susceptible to disease and secondary insect attack. Mortality may occur if trees are completely defoliated year after year, especially under drought conditions.

Damage by oak leafroller and leaftiers is rarely sufficient enough to warrant chemical control. To interrupt the pest's life cycle, remove and destroy any leaf material from below the infested tree. This should minimize the possibility of outbreaks occurring the following year.

Gina

Gina Penny, Provincial Entomologist

References

Oak Leaftier and Oak Leafroller. United States Department of Agriculture, Forest Service, Northeastern Area Southern Region. NA-PR-03-98. http://www.na.fs.fed.us/spfo/pubs/pest_al/oakleaf/oakleaf.htm

Warren, T.J. and Lyon, H.H. 1988. Insects That Feed on Trees and Shrubs. Cornell University Press.

Oak Leaftier. Ornamental Fact Sheets. The Ohio State University. http://www.bugs.osu.edu/~bugdoc/Shetlar/factsheet/ornamental/FSoakleaftier.htm

Drees, B.M. Oak Leaf Roller and Springtime Defoliation of Live Oak Trees. Texas Cooperative Extension, The texas A & M University System. E-206 3-04. http://insects.tamu.edu/extension/publications/E206.pdf

Snowden, P. 1990. How to Distinguish Oak Leaftiers From Leafrollers. United States Dept. Of Agriculture, Forest Service. NA-FR-16. http://www.na.fs.fed.us/spfo/pubs/howtos/ht_oakpests/oakpests.htm

Stewart, J.W. and Bailey, B. 1993. Defoliation of Live Oak Trees by the Oak Leaf Roller and a Closely Related Moth. Texas Agricultural Extension Service, The Texas A & M University System. http://www.insects.tamu.edu/extension/bulletins/uc/uc-021.html

Bits and Pieces

Back to page 1

Pale Winged Grey Update

Mike LeBlanc

On June 10, a few PWG larvae were collected in the Greenfield area, indicating that the overwintering eggs had begun to hatch. This was a week or so later than normal. One week later I again visited the same sites and there were LOTS of larvae, so many that the new shoots were completely consumed on some of the understory trees (eastern hemlock) while others had various degrees of defoliation.

It's too early to tell, but let's cross our fingers that the virus may express itself and cause the collapse of this outbreak this year.

Most Unwanted List

Horse Flies
Mosquitoes
Ants
Euonymus Caterpillars
Wool Sower Galls on oak
Uglynest Caterpillar
Moose Flies
GypsyMoth Larvae
Lily Leaf Beetle

Dishonourable Mention

Dog Ticks (Wood Ticks)
Blacklegged Ticks

Removing ticks: not the old-fashioned way!

L. Robbin Lindsay, Public Health Agency of Canada, Winnipeg, MB

Back to page 1

Ticks suck, blood that is and they are well suited to do so. Ticks are slow feeding ectoparasites that have evolved specialized mouthparts to anchor them into their feeding site and some species even secrete a cement like substance to ensure that they remain attached to their host. They need to have this type of feeding machinery because they take as long as 7 days to complete each blood meal. Ticks require blood in order to develop (or moult) to the next developmental stage (most ticks have three active stages namely: larvae, nymph and adult male and female) and females need blood in order to develop eggs. Ticks take blood meals from a variety of animal hosts and unfortunately some species will readily feed upon humans. In Nova Scotia, the most widespread species of tick that will bite people is the American dog tick, *Dermacentor variabilis*. However, a number of other species will also bite people and the most important species with respect to potential disease transmission is the blacklegged tick, *Ixodes scapularis*. Blacklegged ticks can transmit the agent of Lyme disease, *Borrelia burgdorferi*; however, blacklegged ticks need to be attached for 24 to 36 hours before the bacteria begins to be transferred from the tick to the animal or person it is attached to. As a result, finding and promptly removing them is one of the keys to disease prevention.

There are a number of traditional or "folk" remedies for removing ticks and these include: applying a hot match to the tick, or "smothering" the tick with a number of substances, the most common one used being, petroleum jelly. The Public Health Agency of Canada does not advocate the use of these methods because experimental infestations of animals has shown that these methods either fail to produce the decided effect (i.e., the tick "backs out" or drops off) or the method, like using a hot match, can actually damage or rupture the tick resulting in a greater potential for exposure to any microorganism that might be in the body fluids of the tick. Hot objects might also cause an accidental burn and may even induce the tick to salivate or regurgitate infected fluids into the feeding site. The most effective and fastest method for removing a tick is to use tweezers (or protected fingers) and grasp the tick as close to the skin as possible and pull straight up with steady even pressure. If cement or parts of mouthparts remain, then extract these, if that is practical. As the mouthparts are composed of chitin, they will eventually grow out of the feeding site if they happen to break off during tick removal. The bite site should be disinfected with soap and water (or antiseptic lotions) before and especially after tick removal. Suspected blacklegged ticks can be submitted to Jeff Ogden in Shubenacadie for identification and possible testing for Lyme disease at the National Microbiology lab in Winnipeg.

Project Update

Back to page 1

BioBlitz June 2008

Jeff Ogden

For twenty-four hours in early June I was part of Saint Mary's University's first annual BioBlitz within Long Lake Provincial Park, Halifax. Being an Acadia grad, I don't generally associate with SMU events but in this case I decided I could make an exception.

What is a Bioblitz? Basically, a group of scientists from various disciplines, scour a particular area and collect, count, and identify as many species of organisms as possible within a given time period. In this case there were more than seventy individuals with various areas of expertise: plants (both "higher" and "lower"), mammals, fish, birds, reptiles, and amphibians, and of course, insects and other invertebrates.

Fig 7. Some of the tired but happy Blitzers.

Our base camp was at Exhibition Park, Halifax where the large group of very keen taxonomists, naturalists, and your "above average" geeks . . . both professional and amateur . . . would eat, work, and sleep for the next day. Activities began at 3:00 p.m. on Friday, June 6 with field collections, trap placement and lab setup. Throughout the night . . . all night . . . we processed our collected material and generated species lists. The following morning, through blurry eyes, several of us greeted the public and demonstrated collection, preservation, and identification techniques. Others of us continued to field collect and gather traps in a last gasp attempt to expand our list of species. For some groups, such as the hunters of reptiles and amphibians, their list was virtually complete on the first day, but their species list was also very short. For others, the potential species list could be endless, but in our case, collecting was somewhat weather dependent. Alas, our first day was not that productive. A valiant effort was put forth on Saturday afternoon at the 23rd hour . . . scrambling to identify midges and tiny beetles to family . . . but in the end we were defeated by the plant people by only five species.

All in all a very fun experience, talking to the public about what we do, meeting fellow entomologists, and colleagues from other disciplines, and a little friendly competition between groups as the final nightcap . . . next year those "higher" plant people are goin'down.

Check out the results of the Saint Mary's University's first annual BioBlitz held at Long Lake Provincial Park, Halifax . . .

http://www.stmarys.ca/bioblitz/results.html

Warning Groaner ahead . . .

Why did the man throw his buttered toast?
Because he wanted to watch the butterfly.